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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,095	07/11/2003	Kristofer J. James	279.645US1	3840

21186 7590 09/25/2006

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EXAMINER	
TIBBITS, PIA FLORENCE	

ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/618,095	JAMES ET AL.	
	Examiner	Art Unit	
	Pia F. Tibbits	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-16 and 18-30* is/are rejected.

7)☒ Claim(s) *8 and 17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 February 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/17/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office action is in answer to the amendment filed 7/17/2006. Claims 1-30 are pending, of which claim 20 is amended.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the earlier portion (of a life of the cell)[claim 12], the later portion (of a life of the cell)[claim 12], the two different stored capacity values [claim 13] must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 8, 13 are objected to because of the following informalities:

Claims 8, 13: "the first change", second occurrence, to be replaced by --- the first change of the terminal voltage--- in order to provide proper antecedence.

Claim 13: "a different second time period" to be replaced by --- a different, second time period--- in order to clarify claim language.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 13, 30: "drawing...a first...pulse; measuring a first change of a terminal voltage" is not clear as 2 (two) measurements would be necessary in order to establish a change. To continue prosecution it was assumed that the battery voltage is measured to provide voltages during the discharge pulses, and the voltage differences among two or more of these measured voltages are used.

Claim 20: "a processor circuit, **coupled to or including** the difference circuit" is not clear as a) fig.1 shows the difference circuit as part of the processor, and b) the use of "or" makes the claim language confusing because it is not clear what applicant is actually claiming. Furthermore, applicant is reminded that "or" should only be used with alternate terms, e.g., rod or bars, etc. To continue prosecution it was assumed the processor circuit **includes** the difference circuit.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 13, 14, 30 are rejected under 35 U.S.C. 102(b) as being anticipated by **Podrazhansky et al.** [6281683].

As to claim 1, Podrazhansky discloses in figures 1-4 a method comprising:

drawing a substantially constant first current pulse 210 [see fig.2; column 3, line 35] from an energy storage cell 11 during a first time period 210A between a starting time 220A and an ending time 220B [see fig.2];

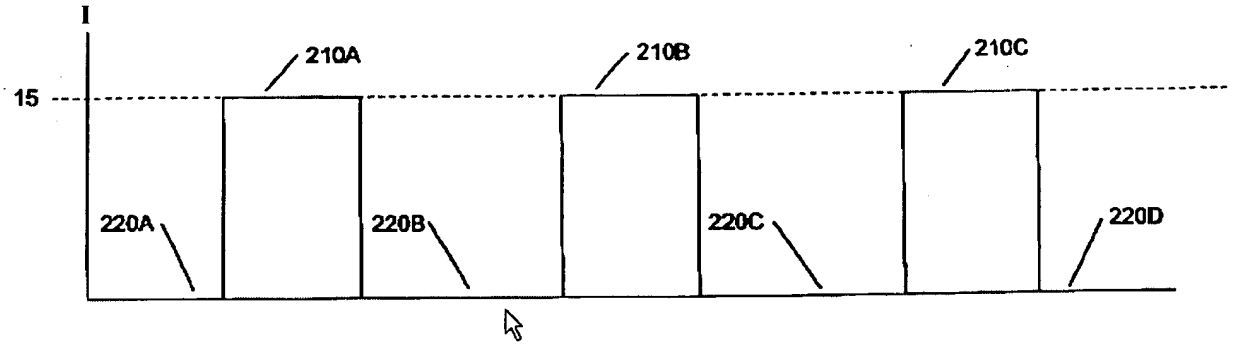
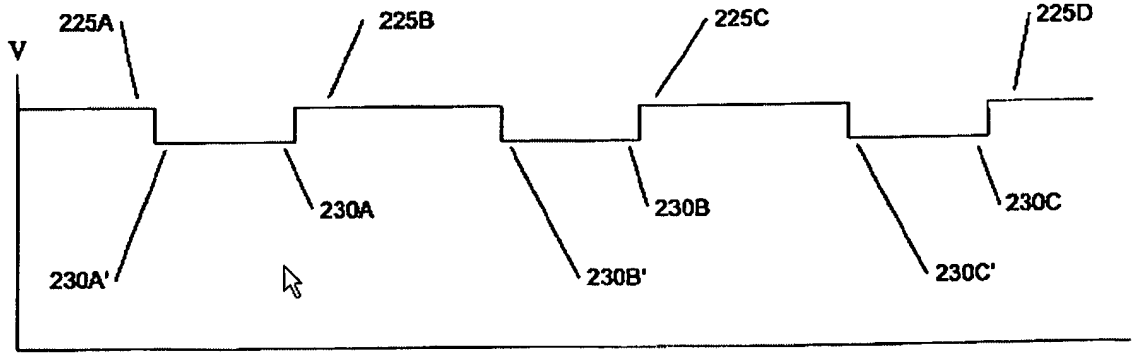


FIG. 2

the battery voltage is measured to provide voltages during the discharge pulses, and the voltage differences among two or more of these measured voltages are used [see fig.2]



and comparing the measured first change to first stored data/curve or LUT [see column 1, lines 44-51].

maximum charge capacity of the battery. One or more discharge pulses and rest periods are applied to the battery. The battery voltage is measured to provide voltages during the rest periods, and/or voltages during is the discharge pulses. The voltage differences among two or more of these measured voltages are used, alone or with the open circuit battery voltage, as an input to a curve, or a look-up table, or to an equation or algorithm, to determine the maximum capacity or condition of the battery and the present charge in the battery. This information is then displayed to the user so that the user will know the maximum capacity and the present charge of the battery. The user can then make an informed decision as to whether the battery is adequate for the project that the user has in mind. The charge parameters may also be output to another process, such as a charging process, to control or alter that process.

As to claims 13, 14, see remarks and reference above.

As to claim 30, Podrazhansky discloses a system comprising:

means 16 for drawing a substantially constant first current pulse 210 [see fig.2; column 3, line 35] from an energy storage cell 11 during a first time period 210A between a starting time 220A and an ending time 220B [see fig.2];

means for measuring the battery voltage during the discharge pulses, and the voltage differences among two or more of these measured voltages are used [see fig.2]; and

means for comparing 13 the measured first change to first stored data/curve or LUT [see fig.3; column 1, lines 44-51].

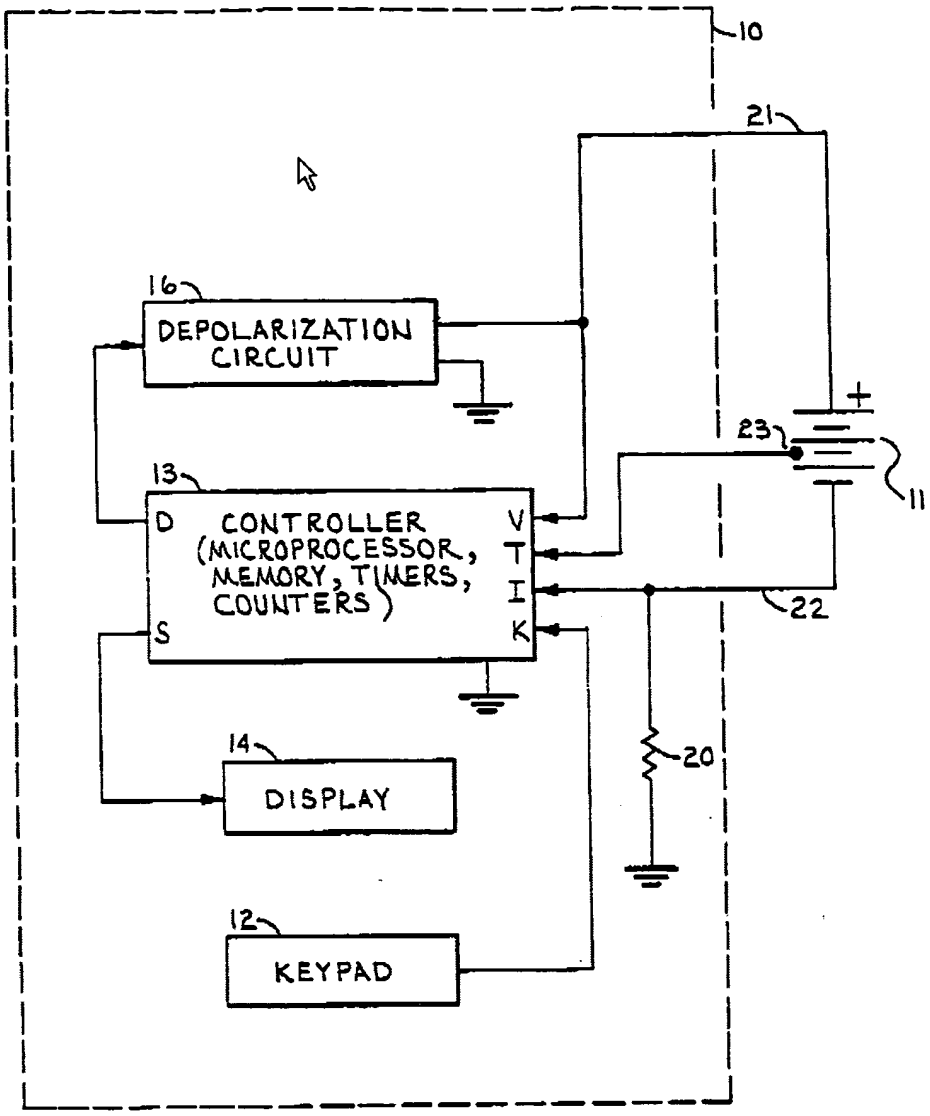

10
21
16
DEPOLARIZATION CIRCUIT
23
+
11
13
D
CONTROLLER (MICROPROCESSOR, MEMORY, TIMERS, COUNTERS)
V
T
I
K
S
22
20
14
DISPLAY
12
KEYPAD

Fig – 1

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 3, 15, 16, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Podrazhansky,** as disclosed above, in view of **Takeuchi et al.** [6166524].

As to claim 2, Podrazhansky does not disclose drawing the first current pulse from a manganese dioxide battery.

Takeuchi discloses using a manganese dioxide battery [see column 2, line 53] when load variations can occur in an implantable medical device wherein the cell may discharge for extended periods under a light load interrupted by pulse discharge [see column 1, lines 50-52]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Podrazhansky's apparatus and include a manganese dioxide battery, as disclosed by Takeuchi, in order to accommodate load variations in an implantable medical device.

As to claim 3, Podrazhansky and Takeuchi disclose drawing the first current pulse from a silver vanadium oxide battery [see column 2, line 54].

As to claims 15, 16, 21, 22, see remarks and references above.

Claims 4-7, 9-12, 18-20, 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Podrazhansky,** as disclosed above.

As to claim 4, Podrazhansky does not disclose the current pulse comprises drawing a substantially constant current of approximately between 2 amperes and 4 amperes. As to the range of the current pulse comprising drawing a substantially constant current of approximately between 2

amperes and 4 amperes, absent any criticality, is only considered to be the use of "optimum" range for the current pulse, that one having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum range value of a result effective variable involves only routine skill in the art in order to provide guidance to an application specific data. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). See also **MPEP 2144.05** statement with regard to **"obviousness of ranges".**

As to claim 5, see remarks and reference above.

As to claim 6, Podrazhansky does not disclose the time period is approximately between 3 seconds and 30 seconds. As to the range of the time period being approximately between 3 seconds and 30 seconds, absent any criticality, is only considered to be the use of "optimum" range for the time period, that one having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum range value of a result effective variable involves only routine skill in the art in order to provide guidance to an application specific data. ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). See also **MPEP 2144.05** statement with regard to **"obviousness of ranges".**

As to claim 7, see remarks and reference above.

As to claim 9, measuring a first terminal voltage across the cell just after the starting time; measuring a second terminal voltage across the cell just before the ending time; and dividing a difference between the first and second terminal voltages by a time difference between the measurements, absent any criticality, is only considered to be the use of "optimum" or "preferred" value for a variable that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the enclosure, since it has been held to be a matter of **obvious design choice** and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. See ***In re Leshin***, 125 USPQ 416. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely in degree

from the results of the Prior Art. ***In re Dreyfus***, 22 CCPA (Patents) 830, 73 F.2d 931, 24 USPQ 52; ***In re Waite et al.***, 35 CCPA (Patents) 1117, 168 F.2d 104, 77 USPQ 586. Such ranges are termed "critical" ranges, and the applicant has the burden of proving such criticality. ***In re Swenson*** **et al.**, 30 CCPA (Patents) 809, 132 F.2d 1020, 56 USPQ 372; ***In re Scherl***, 33 CCPA (Patents) 1193, 156 F.2d 72, 70 USPQ 204. However, even though applicant's modification results in great improvement and utility over the Prior Art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. ***In re Sola***, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; ***In re Norman et al.***, 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ 308; ***In re Irmscher***, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Swain et al.*, 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; ***Minnesota Mining and Mfg. Co. v. Coe***, 69 App. D.C. 217, 99 F. 2d 986, 38 USPQ 213; ***Allen et al. v. Coe***, 77 App. D. C. 324, 135 F.2d 11, 57 USPQ 136.

As to claim 10: the first stored data includes two different stored capacity values corresponding to a single change in terminal voltage across the cell during the first time period, and further comprising:

measuring a quiescent/open circuit voltage of the cell;

(12) FIG. 3 is a chart illustrating how the DELTA-L voltage and the open circuit voltage are used to determine the maximum potential charge and the present charge of the battery. Exemplary discharge curves 301, 302, 303, and 304 for a battery are shown. If the battery has a capacity of 1350 maH (milliamp-hours) then the discharge curve will be curve 304. If the battery has a capacity of 1000 maH, 675 maH, or 400 maH then the discharge curve will be curve 303, 302 or 301, respectively.

(13) An open circuit voltage of X volts will indicate a higher present charge level for a battery on one curve than the same open circuit voltage for a battery on another curve. If the open circuit battery voltage is, for example, 3.75 volts then, using only the open circuit voltage of the battery, one cannot determine the present charge of the battery because the open circuit battery voltage of 3.75 volts may represent any one of points 305, 306, 307, or 308 on curves 301, 302, 303, or 304.

and comparing the measured quiescent voltage to a predetermined threshold/3.75 V to distinguish between the two different stored capacity values that correspond to the single change in terminal voltage across the cell.

As to claims 11, 12, 18, 19, see remarks and reference above.

As to claim 20, Podrazhansky discloses a system comprising:

an energy storage cell 11;

a current source/sink circuit 16, coupled to the cell, to draw a substantially constant first current pulse;

a voltage measurement circuit [see column 3, lines 47-52], coupled to the cell, to measure first and second voltages during the first current pulse;

a difference circuit 13, coupled to the voltage measurement circuit, to compute a difference between the first and second voltages;

and a processor circuit 13, including the difference circuit, the processor circuit including a memory circuit [see fig.1] to store first data/curve or LUT [see column 1, lines 44-51] relating cell

capacity to the difference between the first and second voltages, the memory circuit also including a cell capacity indicator storage location 14 to provide an indication of cell capacity, the processor configured to use the difference between the first and second voltages obtained from the difference circuit and the stored first data indicative of cell capacity to provide the indication of cell capacity [see column 1, lines 44-51].

As to the patent using a temperature sensor connected to the "T" input of the controller 13, which may be used, if desired, to measure the temperature of the battery 11 so that the temperature of the battery may be considered in determining the condition and present charge of the battery 11: eliminating the temperature sensor connected to the "T" input of the controller 13, cited in the Podrazhansky reference, applicant neither improves the indicator of remaining capacity of an energy storage cell, nor makes it easier to determine the useful life of the energy storage cell, as cited in the disclosure. Therefore it would be obvious to one skilled in the art at the time the invention was made that the elimination of an element and its function in a combination is an obvious expedient if the remaining elements perform the same functions as before. See ***Ex parte Wu***, 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989), ***In re Larson,*** 340 F.2d 965, 144 USPQ 347 (CCPA 1965) and ***In re Kuhle,*** 526 F.2d 553, 188 USPQ 7 (CCPA 1975).

As to claims 23-27, see remarks and reference above.

Claims 28, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Podrazhansky,** as disclosed above, in view of disclosed prior art, **Kaib** [6169387].

As to claim 29, Podrazhansky does not disclose the processor is located within an external remote interface device.

Kaib discloses a portable electronic device including a converter-defibrillator having a data processor for determining available operating time for the portable device prior to recharging, and a display panel, or alarm, to inform the patient of, inter alia, available operating time. The patent also discloses:

> 11. The battery management system as recited in claim 10 wherein input/output interface permiits said patient physiological data to be at least one of retrieved from said data storage/processor by an external device and transmitted to a remote location.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Podrazhansky's apparatus and include a processor having input/output communicating with a remote processor, as disclosed by Kaib, in order to be able to retrieve patient physiological data.

As to claim 28, as to the particular location of the processor, i.e., within an implantable medical device, absent any criticality, is only considered to be an obvious modification as it has been held by the courts that there would be no invention in shifting the location of a structure of a device to another location if the operation of the device would not thereby be modified. ***In re Japikse***, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) MPEP 2144.04.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new grounds of rejection.

Allowable Subject Matter

Claims 8, 17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

As to claims 8, 17: none of the references of record prior to applicant's filing date discloses, teaches, or suggests a method comprising, *inter alia*, the measuring the first change of the terminal voltage comprises measuring a polarization angle.

The indicated allowability of claims 9-16, 18-29 is withdrawn in view of the newly discovered reference(s) to Podrazhansky '683. See rejections based on the newly cited reference(s) above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US 20030204219, 20030065366, 20040039424, 6760625, 6744152, 6671552, 6584355, 6490486, 6313609, 6274265, 6198253, 6185461, 6169387, 6154675, 6148235, 6114838, 6108579, 6045941, 6018227, 5929601, 5925068, 5897576, 5869970, 5800472, 5772689, 5741307, 5721482, 5713936, 5700280, 5591213, 5562595, 5483165, 5458624, 5402070, 5391193, 5370668, 5369364, 5344431, 5184616, 4952864, 4868908, 4556061, etc. are references **disclosed by applicant** describing a processor being located within an implantable medical device.

The prior art cited in PTO-892 and not mentioned above disclose related apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Pia Tibbits whose telephone number is 571-272-2086. If unavailable, contact the Supervisory Patent Examiner Karl Easthom whose telephone number is 571-272-1989. The Technology Center Fax number is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PFT

September 8, 2006

Pia Tibbits

Primary Patent Examiner